

**AMENDMENTS TO THE DRAWINGS:**

Attached is the replacement drawing sheet including Fig. 1, 2, 3a, and 3b which should replace the original drawing sheet including Fig. 1, 2, 3a, and 3b. Fig. 2 is amended to add "3" and "4". Fig. 3a is amended to add "3" and "4". Fig. 3b is amended to add "4".

**REMARKS**

Favorable reconsideration of this application is respectfully requested. Claims 16, 17 and 19-29 are pending.

**Specification Objection:**

A substitute specification is filed adding section titles, and adding reference character 4 to identify the panel-like skirt element serving as a door frame and separated by a gap from the door. The substitute specification includes no new matter. Withdrawal of the specification objection is therefore requested.

**Drawing Objections:**

Submitted with this amendment is a replacement drawing sheet labeling the door in each of Figures 2 and 3a with reference character 3, and labeling the panel-like skirt element serving as a door frame in each of Figures 2, 3a and 3b with reference character 4. The replacement drawing sheet includes no new matter. Withdrawal of the drawing objections under 37 C.F.R. § 1.83(a) is therefore requested.

The Examiner further objects to the drawings under 37 C.F.R. § 1.84(p)(5) for failing to label laser 10 and sensor 11 in Figure 1 and for failing to label door 3 and first chamber  $V_0$  in Figures 2 and 3. Notwithstanding that the replacement drawing sheet labels the door 3 in several drawing figures, it is respectfully requested that the Examiner withdraw the objection in view of the inapplicability of objections under 37 C.F.R. § 1.84(p)(5) for reference characters which appear in the drawings. See M.P.E.P. § 608.02(e), particularly the Examiner's Note to Form Paragraph 6.22,

which only instructs the Examiner to identify reference characters not found in the drawings. It is respectfully submitted that reference characters 10 and 11 appear at least in Figure 5, and that reference characters 3 and  $V_0$  appear at least in Figure 1. Withdrawal of the drawing objections under 37 C.F.R. § 1.84(p)(5) is therefore requested.

**Double Patenting:**

The Examiner rejects claims 16, 20, 21, 23, 25 and 26 on the grounds of obviousness-type double patenting as being unpatentable over claims of U.S. Patent No. 7,208,737 and/or claims of U.S. Patent Application No. 11/547,084. Without conceding the propriety of the double patenting rejections, Claim 16 is amended to incorporate the subject matter of Claim 18, which depends from Claim 16 and is not rejected on double patenting grounds. Accordingly, withdrawal of the rejections on double patenting grounds is requested.

**Claim Objection:**

Claim 25 is amended as suggested by the Examiner. Withdrawal of the claim objection is therefore requested.

**35 U.S.C. § 112, second paragraph:**

Claims 17 and 29 are amended to clarify the recited subject matter. Withdrawal of the rejections of Claims 17 and 29 under 35 U.S.C. § 112, second paragraph is therefore respectfully requested.

**35 U.S.C. § 102:**

Claims 16, 18 and 20-22 are rejected under 35 U.S.C. § 102(b) as being anticipated by the article entitled "High sensitivity optical microphone for photoacoustics" authored by de Paula et al., hereinafter *de Paula*.

The present application is directed to a system employing a highly sensitive photoacoustic sensor for analyzing gasses. Electromagnetic radiation is applied to a chamber  $V_0$ , and the resultant pressure variations are sensed by a photoacoustic sensor which is positioned at an aperture of the chamber  $V_0$  as illustrated in Figure 1. The photoacoustic sensor comprises a door 3 mounted on a frame structure 4 which encircles side faces of the door 3 as illustrated in Figure 2.

*de Paula* discloses a photoacoustic sensor including a disk-shaped pellicle glued to a glass fiber and positioned over a duct of a photoacoustic cell as illustrated in Figure 1. In order to carefully position the pellicle, the pellicle is optionally mounted slightly laterally displaced in relation to the duct so that one side of the pellicle touches the border of the duct.

In the Official Action, the Examiner equates the pellicle of *de Paula* with the recited door, and the duct of *de Paula* with the recited aperture. Furthermore, in addressing the recitation previously in cancelled Claim 18, and incorporated into Claim 16 in the present amendment, that the door is at least on one side mounted on a frame structure encircling side faces of the door, the Examiner refers to the portion of *de Paula* disclosing the above-discussed positioning of the pellicle so that one side of the pellicle touches the border of the duct. Accordingly, the Examiner appears to equate the duct of *de Paula* with the recited frame structure, and to take

the position that the pellicle of *de Paula* is mounted to the duct such that the duct encircles the pellicle.

On the point of equating the duct of *de Paula* with the recited frame structure, it is noted that the Examiner has also equated the duct of *de Paula* with the recited aperture. Importantly, the disclosed invention includes both an aperture of the chamber  $V_0$ , and a frame structure 4. On the other hand, as evidenced by the Examiner equating both the aperture and the frame structure with the duct of *de Paula*, the reference does not disclose both an aperture and a frame structure as claimed.

On the point *de Paula*'s pellicle being mounted to the duct such that the duct encircles the pellicle, there is no disclosure in *de Paula* of such an arrangement. The pellicle comprises a disk hanging from a fiber and positioned over the duct, or optionally touching the opening of the duct on one side of the disk. This in no way corresponds to the pellicle being mounted to the duct such that the duct encircles the pellicle.

Accordingly, Claim 16 is allowable over *de Paula*, and withdrawal of the rejection of Claim 16 under 35 U.S.C. § 102(b) as being anticipated by *de Paula* is respectfully requested.

Claims 20-22 are allowable over *de Paula* for at least the same reasons as Claim 16.

Claims 27-29 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,474,168, hereinafter *Meringdal*.

As illustrated in Figure 2, the photoacoustic sensor of the present application includes a panel-like skirt element 4 serving as a door frame, and a door 3 separated

from the panel-like skirt element by a gap. Figure 2 also illustrates that the door 3 is, at least on one side, mounted on structure of the door frame which encircles side faces of the door.

*Meringdal* discloses a photoacoustic sensor including a diaphragm 2, a frame 4, and transition areas 5 which "serve as attachment structures that connect the diaphragm 2 to the frame 4." *Meringdal* col. 8, lines 30-31.

In the Official Action, the Examiner equates the diaphragm 2 of *Meringdal* with the recited door, and the frame 4 of *Meringdal* with the recited panel-like skirt element. However, as discussed above, the diaphragm 2 of *Meringdal* is mounted on transition areas 5. Clearly, as illustrated in Figures 2a and 2b of *Meringdal*, the transition areas 5 do not encircle side faces of the door as recited in Claim 27.

Accordingly, Claim 27 is allowable over *Meringdal*, and withdrawal of the rejection of Claim 27 under 35 U.S.C. § 102(e) as being anticipated by *Meringdal* is respectfully requested.

Claims 28 and 29 are allowable over *Meringdal* for at least the same reasons as Claim 27.

**35 U.S.C. § 103(a):**

Claims 17, 19 and 23-26 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *de Paula* in view of various secondary references. However, parent Claim 16 is allowable for the reasons set forth above. Accordingly, Applicant submits that Claims 17, 19 and 23-26 are also allowable over the applied prior art. Applicant reserves the right to separately challenge the Examiner's rejections under 35 U.S.C. § 103(a) at a later time if necessary and appropriate.

In view of the above remarks, Applicant respectfully submits that all of the claims are allowable and that the entire application is in condition for allowance.

Should any questions arise in connection with this application, the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

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